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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PAK, SUNG H

ART UNIT PAPER NUMBER

2874

DATE MAILED: 08/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

10/061,837

Applicant(s)

RALPH ET AL.

Examiner

Sung H. Pak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____ .
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____ .
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____ .
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Information Disclosure Statement

All references submitted in the information disclosure statement have been considered by the examiner.

Claim Objections

Claims 4-9 are objected to because of the following informalities: "the weighting factor" recited in the claims lack proper antecedent bases. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 8-12, 15, 17-18, 20, 22, 24-25, 27-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller (US 3,777,150).

Miller reference was cited in the information disclosure statement.

Miller discloses a method of detecting and correcting for modal dispersion in a multi-mode fiber with all the limitations set forth in the claims, including: detecting a plurality of optical signals radiating from an end of the multi-mode fiber by a multisegment photodetector having different detector regions that detect different

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portions of the plurality of optical signals (Fig. 3, column 1 lines 40-46); modifying detected signals (using delay) by the multisegment photodetector to reduce effects of modal dispersion among the plurality of optical signals (Fig. 3, column 1 lines 58-61); the multisegment photodetector having at least two concentric coplanar, annular photodetectors (Fig. 3); amplifiers used to amplify the detected optical signals (Fig. 3); the light detection zone having an interdigitated planar metal- semiconductor structure (column 3 lines 25-28).

Regarding claim 15, although Miller reference does not explicitly state the step of converting an input electrical signal to an optical signal, the light source disclosed in Miller is inherently driven by electrical signal source (Fig. 1). Therefore, a step of converting an input electrical signal to an optical signal is inherently disclosed by Miller.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 5, 7, 19, 23, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller (US 3,777,150).

Miller reference discloses a method of detecting and correcting for modal dispersion in a multi-mode fiber with all the limitations set forth in the claims as discussed above, except it does not explicitly teach optically amplifying, phase shifting, or attenuating the detected signal to correct for modal dispersion. However, a step of optically amplifying, phase shifting, or attenuating the detected optical signal in a feedback arrangement to introduce correction to the transmitted signal is well known and commonly implemented in the optical communications art. Such methods are advantageous because it allows for low error and low noise optical transmission. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Miller invention to have a step of optically amplifying, phase shifting, or attenuating the detected optical signal.

Claims 13, 14, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller (US 3,777,150) in view of Kapron et al (US 3,988,614).

Miller discloses a method of detecting and correcting for modal dispersion in a multi-mode fiber with all the limitations set forth in the claims as discussed above,

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except it does not explicitly teach the use of diffracting material or reflective material disposed between the optical fiber and the detection system.

Kapron et al reference, on the other hand, teaches the use of diffractive or reflective material disposed between the fiber and the detector for dispersion compensation (column 2 lines 17-19). Kapron et al reference teaches that use of such materials is advantageous because they allow for efficient dispersion of component lights for efficient detection. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Miller device to have diffractive or reflective material disposed between the fiber and the detector.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (703) 308-4880. The examiner can normally be reached on Monday - Thursday : 6:30am-5:00pm.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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July 23, 2003

Sung H. Pak
Examiner
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HEMANG SANGHAVI
PRIMARY EXAMINER